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OF THE AIR FORCE**

AIR FORCE POLICY DIRECTIVE 15-1

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Weather

WEATHER OPERATIONS

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This directive establishes policy for weather operations and applies to Regular Air Force and Air Force Reserve Components when in Title 10 status, consistent with Air Force Policy Directive (AFPD) 90-1, *Policy Formulation*, and AFD 16-10, *Modeling and Simulation*. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 through appropriate functional office within the chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AF Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with AF Records Disposition Schedule located in the AF Records Information Management System.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. Responsibilities were updated according to Program Action Directive (PAD) 14-03, *Realignment of the Air Force Weather Agency*.

1. Policy. This directive governs AF weather policy and oversight for weather operations that characterize the environment and exploit weather information in support of designated national security objectives.

1.1. Within the AF, weather operations are considered a subset of the Global Integrated Intelligence, Reconnaissance and Surveillance core function.

1.2. AF weather operations are an essential support and service capability across all designated AF core functions and Army warfighting functions.

1.3. The AF conducts weather operations to provide accurate, timely, relevant and consistent air and space environmental information to AF and specified Army units, including their respective Reserve components, and as directed, joint forces, coalition forces, and other agencies, such as those combat support agencies under the purview of the Under Secretary of Defense for Intelligence as defined in DoDD 3000.06, *Combat Support Agencies (CSAs)*.

1.4. Weather personnel characterize and enable exploitation of the environment through collection, processing, analysis and prediction, tailoring, and dissemination of atmospheric and space weather data and information from DoD, allied military, interagency, and other sources. This processed information may be further tailored and is integrated for use by decision-makers at the strategic, operational and tactical levels. These processes contribute to two distinct, yet related, primary functions: (1) characterizing the past, current, and future weather conditions, and (2) exploiting those conditions as actionable and authoritative information, injected at key decision points supporting military operations.

1.5. Data and information on the state of the air and space environment are essential elements of all military operations. Environmental situational awareness is critical to predictive battlespace awareness and enables commanders at all levels to exploit the conditional state(s) of the atmosphere and space environments and the effects of those conditions on military operations in order to achieve specified mission objectives. Commanders must integrate the effects of the air and space environments on friendly and enemy capabilities into appropriate risk management and military decision-making processes.

2. Roles and Responsibilities.

2.1. The Office of the Secretary of the Air Force and the Air Staff are responsible for policy and resource advocacy and allocation for weather operations provided by the Air Force.

2.2. Deputy Chief of Staff (DCS), Operations, (HQ USAF/A3) is responsible for:

2.2.1. Weather operations and capabilities to support military operations and direct support to elements of the AF and the U.S. Army according to interservice directives and Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3810.01D, *Meteorological and Oceanographic Operations*.

2.2.2. Implementing Global Force Management force allocation guidance for AF weather capabilities, working with JCS, to organize and allocate these capabilities to meet Combatant Commander requirements according to AFPD 10-4, *Operations Planning: Air & Space Expeditionary Force (AEF)*. Providing policy and guidance to assign all AF military weather personnel against AEF Indicators, including assessment and monitoring of AF-wide weather technical performance and effectiveness and operational readiness of weather capabilities.

2.2.3. Space weather operations capabilities in support of all elements of the DoD.

2.2.4. Authoritative climate data and information in support of, and consistent with National Climate Assessments and associated DoD activities involving the mitigation and adaptation of DoD and military planning and resource decisions, worldwide.

2.2.5. Guidance and procedures to implement AF weather operations, to include AF Modeling and Simulation activities for the Air and Space Natural Environment according to DoDI 5000.70, *Management of DoD Modeling and Simulation Activities*, and AFPD 16-10, *Modeling and Simulation*.

2.2.6. Oversight and advocacy for the AF Weather Weapon Systems (AFWWS) to include strategic planning, architecture, capabilities-based analyses, programming, budgeting and sustainment.

2.2.7. Weather expertise in response to HQ USAF, DoD, interagency, international, and other government inquiries for space weather, climatological or other weather-related topics, as required.

2.3. Major Command (MAJCOM) commanders providing support to AF and/or Army missions shall:

2.3.1. Employ appropriately sized weather staffs to provide theater specific, strategic-level advice, subject matter expertise, staff support, and coordination.

2.3.2. Organize, train and equip assigned weather personnel to perform two primary functions: characterization of the environment and to enable exploitation of environmental information within military decision-making processes. Weather personnel process and disseminate the outputs of collection, analysis, prediction and tailoring of environmental information in order to integrate them into operations and intelligence decision-making processes while also providing a forward presence for reachback organizations. This allows decision-makers to exploit air and space environmental information to gain an operational advantage and mitigate risk. Thus, commanders of supported units will include weather personnel in their organizations' mission planning and execution processes.

2.3.3. Assess and monitor technical performance and effectiveness and operational readiness of weather capabilities according to AFPD 10-4.

2.3.4. In the role of lead or using commands, ensure weather capabilities are integrated and considered in any lead-command planning and requirements processes and/or forwarded to the appropriate lead command.

2.3.5. In coordination with supported commands, as required, ensure weather capabilities are considered and integrated within the development and execution of training, war, exercise, and contingency plans and orders.

2.3.6. In the role of using commands, ensure weather resources (e.g., manpower, funding) are efficiently and effectively allocated toward validated requirements.

2.4. Commander, Air Combat Command, shall:

2.4.1. Execute lead command functions for the AFWWS according to AFPD 10-9, *Lead Command Designation and Responsibilities for Weapons Systems*, and other directives.

2.4.2. Conduct global and regional centralized weather operations in support of AF, Army and other designated missions, leveraged across all MAJCOMs. Production shall support both a regional and global scope of responsibility providing the full spectrum of centralized weather information (including output from numerical weather prediction models, meteorological satellite imagery, air and space environmental data and products, and climatology) to characterize the past, current, and future air and space environment.

2.5. Commander, Air Education and Training Command shall:

2.5.1. Assess training needs, provide initial skills and institutional advanced training programs for enlisted and officer weather personnel and assist Air Staff in effectively developing and sustaining weather personnel. Develop distributed learning materials in support of the weather-training program.

2.5.2. Sustain a Basic Meteorological Program for the entry-level accession of weather officers without requisite meteorology or atmospheric science degrees, and advanced academic degree programs at the Masters and Doctorate levels for weather and space weather to include a resident atmospheric science master's program.

2.6. Commander, Air Force Materiel Command (AFMC) shall:

2.6.1. Conduct integrated lifecycle management for assigned components of the AFWWS through supporting Program Executive Officers (PEOs).

2.6.2. Provide staff meteorological support to AFMC-managed research, development, acquisition, testing and sustainment efforts for AF weapon systems and assist the AF weather community in developing and maintaining capabilities to support emerging weapon systems.

2.7. Commander, Air Force Space Command shall:

2.7.1. Execute lead and implementing command functions for space-based environmental monitoring and designated ground-based satellite segments and space weather systems through supporting PEOs, according to AFPD 10-9 and other directives.

2.8. Commander, Air Force Special Operations Command shall:

2.8.1. Be responsible for unique weather capabilities required to support special operations missions, including those required to support US Army Special Operations Command, through US Special Operations Command, to include planning, programming, budgeting and sustainment of required capabilities. Enlisted Special Operations Weather Team capabilities will be advocated according to AFPD 10-35, *Battlefield Airmen*.

Deborah Lee James
Secretary of the Air Force

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFPD 10-4, *Operations Planning: Air & Space Expeditionary Force (AEF)*, 30 April 2009

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapons Systems*, 8 March 2007

AFPD 10-35, *Battlefield Airmen*, 4 February 2005

AFPD 16-10, *Modeling and Simulation*, 23 January 2015

AFPD 90-1, *Policy Formulation*, 6 October 2010

AFMAN 33-363, *Management of Records*, 1 March 2008

PAD 14-03, *Realignment of the Air Force Weather Agency*, 5 January 2015

DoDD 3000.06, *Combat Support Agencies (CSAs)*, 27 June 2013

DoDI 5000.70, *Management of DoD Modeling and Simulation Activities*, 10 May 2014

CJCSI 3810.01D, *Meteorological and Oceanographic Operations*, 28 June 2013

Joint Publication (JP) 2-0, *Joint Intelligence*, 22 October 2013

JP 2-01, *Joint and National Intelligence Support to Military Operations*, 5 January 2012

AF Doctrine (AFD) Annex 3-59, *Weather Operations*, 27 May 2015

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AEF —Air and Space Expeditionary Force

AF —Air Force

AFD —Air Force Doctrine

AFMAN —Air Force Manual

AFMC —Air Force Materiel Command

AFMD —Air Force Mission Directive

AFPD —Air Force Policy Directive

AFWWS —Air Force Weather Weapon System

CJCSI —Chairman, Joint Chiefs of Staff Instruction

CSA —Combat Support Agency

DoD —Department of Defense

DoDD —Department of Defense Directive

DoDI —Department of Defense Instruction

JP —Joint Publication

MAJCOM —Major Command

OPR —Office of Primary Responsibility

PAD —Program Action Directive

PEO —Program Executive Officer

Terms

Analysis —In weather operations, the process of studying and transforming collected and processed weather observations in the form of data and information into a current or near term characterization of the state of the air and space environment; usually including a separation of the entity into its component patterns and involving the drawing of families of isopleths for various elements. Thus, the analysis of weather charts may consist, for example, of the drawing and the interpretation of the patterns of wind, pressure, pressure change, temperature, humidity, clouds, and hydrometeors, all based on observations taken or forecast simultaneously. (Derived from the American Meteorological Society Glossary of Meteorology)

Authoritative Information —In weather operations, relevant weather information and products tailored or validated by an appropriate weather authority, accurately depicting the state of the air and/or space environment at a specified place and time that is the basis for consistent military decision-making.

Characterization —In weather operations, a primary function of collecting accurate weather and other environmental data and processing this data into usable information in order to analyze that data, and to use the results to produce a coherent picture of the past, present and/or future state of the air and space environment. It encompasses the weather processes of collection, exclusively, and also elements to the processes of analysis, prediction, and tailoring. (Derived from AFD Annex 3-59).

Collection —In weather operations, the process of gathering and storing raw weather data and information into databases and processing elements from which weather products are later derived. (Derived from JP 2-01 and AFD Annex 3-59).

Dissemination —The process of delivering information and products to end users in a suitable form. (Derived from JP 2-01)

Exploitation —In weather operations, a primary function of taking full advantage of available weather data and information for tactical, operational, or strategic military advantage. (Derived from JP 2-01.3 and AFD Annex 3-59).

Integration —The process of applying tailored information and products to appropriate missions, tasks, and functions to inform planning and execution decision-making (Derived from JP 2-01 and AFD Annex 3-59).

Mitigation —The process of providing decision-makers with options and courses of action, based on tailored and integrated information, allowing adjustment of resources to reduce risks and maximize desired outcomes. (Derived from AFD Annex 3-59).

Prediction —In weather operations, the process of determining the future state of the atmospheric and space weather environment from analyzed weather data and information, including, but not limited to, assessing advanced mathematical models. The end product of the predictive analysis is a weather forecast.

Processing —A system of operations (process) designed to convert raw data into useful information (JP 20).

Tailoring —The process of transforming relevant information into actionable information and products by depicting them against operationally significant parameters and values. (Derived from AFD Annex 3-59).